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FRONT COVER

English Farmer

George Casely farms 50 acres—typical size of an English farm. He has plowed up a quarter of his grassland and has increased his farm's milk production. A rotation providing for increased output of feedstuffs on land plowed up during the war is part of Britain's farm program. (Photo courtesy of British Information Services.)

BACK COVER

Charts Showing United States Exports of Selected Agricultural Commodities to The United Kingdom

Over the years the United Kingdom has been the American farmers' principal foreign market. Selected commodities shown on this chart are discussed on pp. 7–9.

NEWS NOTES

Recent TCB Extension Assignments

Paul G. Adams, State 4–H Club leader from Oklahoma and former extension livestock specialist, recently arrived in Nicaragua to begin work as an extension specialist with the cooperative agricultural program. *M. B. Nichols,* extension dairyman from Washington State College, has gone to Quito, Ecuador, where he is to be extension dairy specialist, with headquarters at the cooperative agricultural station, Estacion Agricola del Ecuador. *Canuto Trujillo,* former county agent from Socorro, New Mexico, left Washington recently for Bolivia where he will be extension specialist at La Tamborada, the cooperative agricultural station at Cochabamba. *Clayton Long,* horticulturist, is now in Peru, assigned as a technician to the Cooperative Technical Collaboration project. Stationed at Tingo María, he will take over the work of *Dr. Iverson* who has returned to Montana State College where he is with the horticultural department.

Information Specialist Visits Latin America

Kenneth W. Olson, Assistant Head of Information of the Office of Foreign Agricultural Relations, has just returned from a 5-week trip to Cuba, El Salvador, and Guatemala, where he worked with station specialists on their publications programs, especially in connection with reporting results of research and extension work.

Mr. Van Dyne Returns from Africa

George W. Van Dyne, International Commodities Branch, OFAR, returned recently from South and East Africa, where he had spent 4 months investigating future trends there in growing tobacco that would compete with United States leaf in world markets. His study was conducted under the authority of the Research and Marketing Act.

Credit for photos is given as follows: p. 5, Extension Service and Office of Information; p. 8, PMA; pp. 11, 13, FAO; p. 15, W. P. Sellers; pp. 18–19, James H. Kempton; pp. 21–23, *Manila Times.*

FOREIGN AGRICULTURE ALICE I. FRAY, EDITOR

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United Kingdom Market for United States Farm Products

Britain's program for expanding domestic agricultural production and British trade policies and programs greatly affect United States agricultural exports to the United Kingdom.

by MONTELL OGDON

There is no question about the importance of the British market to American farmers. It has traditionally been the best foreign market for United States agricultural products. Before World War II the British took annually 30–35 percent of the farm exports of the United States. Their import-buyers of cotton, tobacco, fruit, and many other agricultural products counted on the United States as a chief source of supply because the types of commodities it provided met the needs or tastes of British consumers.

Except in wartime, cotton and tobacco have been our leading export commodities to Britain. Ranking next, fruit consistently claimed a large part of the trade. During the war, exports of animal and poultry products shot up. After the war, along with the trade in agricultural products as a whole, they leveled off to about half the wartime peak.

The $3.75 billion postwar loan obtained by Britain from the United States helped to maintain the level of British purchases up to the middle of 1947. The loan was used up much faster than anticipated, however, and in August 1947 the United Kingdom curtailed its imports from the United States with a view to saving dollars.

As a result of this 1947 crisis the British Ministry of Food discontinued almost all purchases of food products from the United States. Our foodstuff exports to Britain declined to a level of $35 million during 1948, compared with $350 million in 1947. The total for food, cotton, and tobacco taken together was less than $200 million in 1948 in contrast to $537 million in 1947.

Assistance to the United Kingdom by the Economic Cooperation Administration resulted in some relaxation of British restrictions on imports of United States agricultural products; but renewed losses of gold and dollar reserves by Britain during the first half of 1949 caused it again to tighten import restrictions.

Domestic Agricultural Program

The present agricultural program in the United Kingdom may be characterized as a Government support program for high levels of output of most crops and of domestic agriculture as a whole. It is a continuation of a policy developed to its fullest extent during World War II, which included guaranteed prices and an assured market for domestic products through the crop year 1947–48 and was calculated to avert a postwar decline in the British agricultural industry.

Domestic agricultural output in the United Kingdom declined continually from 1872 until World War I. This trend was reversed in 1914–18 to meet war needs, but it was resumed at the end of the war, and British farmers went through a serious financial crisis in the 1920's. They met the crisis in part by reducing their production costs through lowering farm wages, dismissing farm help, and shifting from field crops to grassland farming.

Their distress, and the further threat of low prices that came with the world agricultural crisis of the interwar period, brought a gradual reversal of much of their Government's policy. Steps were taken to raise prices for domestic farm products and to protect farmers from foreign competition. To obtain these ends the Government created several agricultural boards with authority to control marketing so as to raise farm prices; subsidized the producers of main types of crops; and restricted foreign competition through tariffs and import quotas, or threats of import quotas if foreign suppliers did not voluntarily curtail their exports to Britain. A policy of guaranteeing wages of farm workers and planning housing for them was also established in the interwar period, and a beginning was made in a national nutrition program.

Dr. Ogdon is Head, United Kingdom and Dominions Division, Regional Investigations Branch, OFAR.

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Present Domestic Goals

The present food and agriculture program of the United Kingdom was announced in 1947 and became effective in 1948. This plan calls for the following goals within 4 years:

1. An over-all 15-percent increase in the output of British agriculture compared with the wartime peak of 1943, and a 50-percent increase compared with prewar.
2. A 30-percent reduction in total imports of food and feed by 1952 compared with prewar.
3. A diet including more wheat, potatoes, eggs, and dairy products than during the prewar period, but less meat.

The land-use shifts that are involved in the program are shown in table 1.

As to livestock production the present 4-year plan calls for a 10-percent increase in 1952 over the 1936–39 output of beef and veal and a 31-percent increase for eggs. Pork production would be approximately 10 percent below the prewar level, and the production of mutton and lamb would be 20 percent below. Milk production has been especially emphasized since it fits in with the programs for both improved nutrition and land utilization. An increase in milk output of 23 percent above prewar is planned.

Conditions and trends seem to favor livestock rather than wheat production. More than 30 percent of the 18.4 million acres of arable land is in temporary grass. In addition there are 12.7 million acres classified as permanent grass and more than 17 million acres in rough grazing. Traditionally, British farmers prefer raising livestock to growing grain and are exhibiting that preference by shifting their land from grain to grass

TABLE 1.—*Land use, United Kingdom, selected years and goals 1952*

[In 1,000 acres]

Crop	Average 1936-38	1943	1948	1949 [1]	1952
Bread grains	1,872	3,593	2,340	2,028	2,805
Other grains	3,429	5,967	6,016	5,988	6,450
Total	5,301	9,560	8,356	8,016	9,255
Potatoes	723	1,391	1,548	1,309	1,300
Sugar beets	335	417	413	420	400
Linseed	2	(3)	86	58	400
Other crops [2]	2,581	3,141	2,777	2,835	3,255
Total crops [2]	8,942	14,509	13,180	12,638	14,410
Rotation grass	4,145	4,219	5,484	5,721	(4)
Permanent grass	18,750	12,330	12,398	12,680	11,000
Total crops and grass	31,837	31,058	31,062	31,040	31,100
Rough grazings	16,476	17,119	17,211	17,200	17,200

Compiled from official sources.
[1] Agricultural returns, Ministry of Agriculture and Fisheries, United Kingdom, preliminary report, Oct. 24, 1949, subject to revision.
[2] Including land in fallow.
[3] Not available.
[4] Not fixed.

now that the patriotic urge to grow more grain is not so strong as it was during the war. The 1949 wheat acreage dropped below 2 million, compared with 2.3 million in 1948 and 3.5 million in 1943.

The effectiveness of the grassland program depends on the costs involved and the extent to which land, in the long run, can be made to produce more under improved grassland culture than it is now producing or can be made to produce in other feed or food crops.

The grassland problem in the United Kingdom is in fact a difficult one. In the first place, possibilities for the production of dried grass, which is particularly desirable because of its protein value, are limited by the geography and land usages of the country. Much of the United Kingdom has a rough terrain. Horticultural production or mixed grain and livestock farming are firmly established in the flatlands. These areas are already among the most intensely cultivated in Europe and cannot add to the total agricultural output by an increased grass acreage in their rotations. In the Midlands and other moderately rolling areas, it may be possible to increase somewhat the total farm production by growing more grass. Rotations in all the better farming areas, however, are scientifically worked out, and the yields of grain and forage are already high.

Hill lands are plentiful and are only partly cropped, but clearing, leveling, and preparing seedbeds for grass is more difficult and more expensive than converting pastures to field crops, which was achieved with such success during the war. After such land is cleared, much care is required to prevent it from reverting to thickets.

Attaining the bread-grain goal is likely to be difficult; it is doubtful whether that target will be reached. Attainment of most of the other goals appears likely. Problems may be expected for some minor crops such as linseed, which is being produced primarily for the value of cake and meal as a high-protein feed. Acreages of other feedstuffs are being well maintained. Output of milk and other livestock products is rising in accordance with expectations.

Factors that have a bearing on the future of the farm program as a whole are (1) the conditions causing the shift away from wheat, (2) the efficiency of the dried-grass program, (3) the high level of Government expenditure on capital improvement of agriculture and on food and agricultural subsidies, and (4) the indirect effect of the farm program on the national export program.

Cotton in Arkansas and tobacco in South Carolina, industries that have built important markets in the United Kingdom.

Cost of the Program

The cost of the farm program in terms of labor and capital equipment raises the question whether returns will be commensurate with those that might be attained by other use of resources. The program calls for increasing the farm labor force by 75,000 persons above the number of civilians in farm work at the end of the war. Total capital investment planned in the 4-year program ending in 1952 is $1.8 billion.

An average of $4,200 per agricultural holding of 5 acres or more would be spent on capital equipment and improvements. This means a rapid increase in the use of machinery by farmers many of whom do not have experience in the use of power equipment. Officials in the United Kingdom envisage a total of 400,000 tractors and the necessary complement of mechanized equipment on British farms within the next 10 years, compared with 55,000 prewar and 265,800 at the beginning of 1949. They also foresee extensive electrification.

The United Kingdom is a high-cost producer of such farm products as sugar beets, linseed, dried grass, and pork products. Output above the maximums obtained for wheat, barley, and rye during or since the war may also represent high-cost production.

Two steps were taken during the past year to make producers bear a somewhat greater responsibility for production costs. The British Parliament passed the *Agricultural Marketing Act of 1949* amending acts of 1931 and 1933. The new act has to do with membership and the authority of the Marketing Boards.

If practices of a board have limited the quantity of products made available to the public or regulated the price of products, with results contrary to the public interest, the Minister may, after considerable preliminary procedure, require a board to take steps to prevent or mitigate damage to the public interest.

Subsidies, which have been utilized to keep inflationary pressures from being fully reflected in consumer prices, have been reduced.

Payments in 1948 reached an annual level of £485 million (just over $2 billion at the then official rate of exchange).[1] The Government at this point declared

[1] Of the total food subsidies for 1949–50, 40 percent was paid on imported foods, the remainder going to reduction of fertilizer and feed costs, acreage payments for production of wheat, rye, and potatoes, and the difference between the prices guaranteed to farmers and the prices charged the public under Government controls.

the expenditures too burdensome. It has announced modification of several subsidy programs including discontinuance early in 1950 of the subsidy on animal feedstuffs amounting to about $100 million annually. There will also be a saving resulting from several modifications in the potato acreage subsidy including a change from £12 for the first 10 acres and £8 per acre thereafter to a straight rate of £10 ($28) per acre.

The major indirect effect of the domestic agricultural program in the United Kingdom is the saving, or loss of earnings, in foreign exchange. Considerable amounts of steel and other materials are going into farm electrical equipment, farm buildings, and tractors and other types of farm machinery. Since Britain is short of these materials, the inevitable immediate effect is smaller British export potential. There is to offset this a saving in foreign-exchange expenditure on food and feedstuffs imports. Many farms in Britain, on which there is high production and efficient use of land and equipment, contribute to the saving of foreign exchange. Whether large expenditures on marginal farms, however, will result in a further net reduction in future British import needs depends on whether the British are willing to reduce their domestic consumption of nonagricultural products in order to maintain their exports of those products.

Commonwealth and Empire Trade Programs

Since World War I, strong tendencies in Britain have favored a policy of shifting trade from non-Empire to Empire channels. Increases in United States tariffs during the first part of the interwar period had the effect of strengthening these tendencies. The major instrument of that British policy in the interwar period was Empire tariff preferences—higher duties on non-Empire products than on Empire products. After World War II, British balance-of-payments difficulties were an incentive to further shifts from the United States and other dollar areas to Empire areas and other soft-currency countries. This was accomplished by direct trade controls and bilateral trading arrangements.

Empire conferences held in 1917, 1923, and 1926 favored shifts to Empire sources of supply. Empire tariff preference was granted in 1919, to Dominion producers of dried and canned fruit, corn sirup, and tobacco competing with United States producers in the British market. In the 1920's and in 1931, discriminatory tariffs were applied to other United States agricultural products—fruit juices, apples, and other horticultural products.

The famous Ottawa conference, held in the summer of 1932, set up a comprehensive system of tariff preferences involving the United Kingdom, its dependent areas, Canada, and the Southern Dominions. The extended list of preferences included many horticultural products, feed grains, tobacco, and animal products. Those preferences adversely affected the competitive position of important United States agricultural products in the British market.

In the reciprocal trade agreement negotiated between the United States and the United Kingdom prior to the last war, and in the General Agreement on Tariffs and Trade concluded in Geneva in 1947, the United Kingdom preferences were eliminated on a good many items of importance to United States farm producers. These included wheat, lard, grapefruit, grapefruit juice, and orange juice, in 1938; and fresh apples (during the main United States export season of the year), fruit salad in cans, and several dried fruits, in the Geneva Agreement. Continued free entry of some other commodities previously entered free of duty into the United Kingdom was agreed to in each agreement, including cotton and several pork products.

These agreements limited the scope of preferences in some other cases, including soybeans, soybean cake and meal, and certain fruit and vegetable products, and established a general rule against new preferences or increases in old ones. Tariff preferences imposed by British dependent areas and the Dominions have been modified considerably by the series of trade agreements, those made by Canada being the most significant. Such elimination or modification of Empire preference, however, may be largely ineffective in stimulating trade as long as foreign-exchange restrictions are operative.

At the end of World War II the United Kingdom found itself deprived of a large part of its foreign investments and with large new obligations to India, Ireland, and many other countries (most of them part of the so-called sterling areas). Its position as an exporter of goods and services also had suffered greatly under the impact of war. To tide the United Kingdom over these difficulties, the United States loaned it $3,750,000,000 and Canada made a loan of $1,250,000,000. Recovery of Britain's export trade, however, was somewhat slower than anticipated.

The trading position of the United Kingdom and the rest of the sterling area vis-á-vis the United States and other "dollar" countries did not improve adequately. As a result the United States loan was used up far ahead of schedule, and the British found it necessary

to restrict imports severely in 1947. United States farm products were particularly affected by these restrictions. Subsequently ECA aid eased Britain's dollar position, and some of the British import restrictions were relaxed. However, Britain again lost considerable amounts of gold and dollars in the first three quarters of 1949 and once more tightened import restrictions. To improve its competitive position in dollar markets, and thus to earn more dollars for the payment of its imports, Britain devalued the pound sterling by 30.5 percent in September 1949.

Bilateral contracts have caused British imports to shift to areas that themselves offered large markets for British export products. As of the last quarter of the calendar year 1949 the Ministry of Food's long-term bulk-purchase contracts numbered 53. As pointed out by the President of the Board of Trade, 42 of these were with Commonwealth countries.[2] He also stated that Empire sources were supplying 46 percent of England's imports, compared with 36 percent in 1934–38. Several agreements have also been made for purchase of agricultural products from European countries, both Eastern and Western, but the total imports resulting from such arrangements have not raised the percentage of British imports from that area above the prewar level.

Cotton

In 1921–25 the United States sent to the United Kingdom an annual average of 1.9 million bales of raw cotton; in 1931–40, 1.2 million; in 1944–48, 0.5 million; but in the crop year of 1948–49, 0.8 million was sent.

One of the main factors in the prewar decline was the competition encountered abroad by British textiles. Within the boundaries of their own Empire the British lost much of their market to Japan for their bulk line products. Concurrently, the growth of local textile industries made inroads into previous British export markets, especially in Canada, Latin America, and India.

The development of other sources of cotton in South America and the British Empire was a factor in the decline of United Kingdom cotton imports from the United States. This competition may be expected to continue.

The higher prices in sterling that spinners will have to pay, as a result of devaluation, for United States cotton compared with that grown in the African areas (whose currencies were devalued with the pound sterling), in addition to the Government's program for expanding colonial production and of restricting purchase from the United States, will be a great boon to Empire cotton producers.

In a message to the Annual Meeting of the Empire Cotton Growing Corporation in July 1949, President of the Board of Trade, Harold Wilson, emphasized the African cotton development projects. He said:

> no effort should be spared to encourage measures likely to lead to an increase in the acreage and yield of cotton growing, particularly of the American type which is so important to the Lancashire cotton industry.

The Chancellor of the Exchequer has declared that the United Kingdom's cotton purchases from the United States would continue to be maintained at about the same volume as in 1948, which is a considerable increase since the end of the war.[3]

British demand in the near future for United States type of raw cotton may not be expected to reach the peak levels of the 1920's nor those of the latter part of the 1930's. Britain's textile interests apparently intend to operate their postwar mills at a reduced level but with more efficiency than before the war. Greater emphasis is also being placed on synthetic textile products that can use wood pulp, in part from nondollar areas, and on higher grades of cotton textiles, which use a smaller percent of United States medium to medium-short staple, than on the bulk line of textiles.

Fruit and Vegetables

In 1935–39 Britons took some 4 million bushels of our apples a year, or 40 percent of our average apple exports; 1.3 million bushels of pears, or nearly 50 percent. They took smaller amounts of other of our important fresh-fruit exports—oranges, grapefruit, grapes, and plums—large quantities of prunes and raisins; and, in the 1920's and 1930's, from 6 to 10 million pounds of other dried fruit a year.

We also exported a variety of canned fruit to the United Kingdom, a trade that climbed steadily during the interwar period from an average of 193 million pounds a year in 1926–30 to 280 million pounds in 1938. Exports of canned vegetables and soups averaged nearly 20 million pounds a year in 1926–30 and declined during the 30's until just before the war; dried vegetables followed the same trend.

Tariff preference was a big factor in the decline in United States exports and the rise in Dominion exports of fresh, dried, and canned fruit and canned vegetables in the early 20's and 30's. British purchases of raisins from the United States amounted to 20,000 tons in 1922 but declined to 10,000 in 1924. During this period Australian vines began to bear and Britain increased raisin imports from Australia from 5,000 tons in 1922 to 22,800 in 1924. Other examples of such shifts during the interwar period, though usually not so abrupt, include several other dried fruits, fresh fruit, and canned fruits and vegetables.

More land has been planted in recent years to raisin grapes in Australia, other deciduous fruit in Australia and the Union of South Africa, and to citrus in Jamaica. These areas will give rather keen competition

[2] *The Times*, London, Oct. 21, 1949, p. 4.

[3] "United Kingdom Increases Use of United States Cotton," *Foreign Crops and Markets*, November 21, 1949, pp. 546–7.

but would not exclude American fruit from the British market. Many oranges and grapefruit entering the United Kingdom during 1947 and 1948 were bought at a higher price under bulk-purchase agreements than if they had been purchased in the United States.

Consumption of citrus fruit is approaching prewar levels in the United Kingdom. Imports of deciduous fruit, however, are still low. Consumers are fruit hungry. There appears to be a large unsatisfied demand for citrus fruit, and apples would be welcome, too, particularly after the home-grown supply is gone.

Among the most significant reductions of the Empire tariff preferences since the war have been those on fruit—fresh, dried, and canned—and some of the canned vegetables. If the foreign-exchange problem can be solved, the United States fruit industry will find an expanded and freer market in the United Kingdom than it had before.

Total fresh and other fruit exports from the United States to the United Kingdom in 1948, however, were only $77,668, compared with $36 million on the average in 1936–38 and $44 million in 1947. ECA programs within the year just ended included some fruit, principally prunes, raisins, and concentrated orange juice.

Livestock Products

For decades the United Kingdom was a leading foreign outlet for United States pork products, but in the 1930's the trade declined. One factor in this decline was the drought that temporarily limited United States supplies in 1935 and 1937. Another was the British program of limiting imports and subsidizing domestic producers during the period beginning in 1932.

Quantitative restrictions on imports from all sources of cured bacon, hams, and shoulders were "negotiated" by the British Government in November 1932 under threat of an order if such suppliers did not "voluntarily" submit to the proposed quotas. Failure of Denmark to agree to its quota for a second year resulted in promulgation in November 1933 of an import regulation fixing quotas under the compulsory powers in the Agricultural Marketing Act. Total ham and bacon imports provided by Empire sources rose from 4.4 percent in 1932 to 29.3 percent in 1937.

Importation of pork other than bacon, ham, and canned pork was prohibited in 1935 except under license, thus curtailing an important United States outlet. During 1921–30, fresh pork, pickled, salted, and canned pork had been our principal "other" pork exports to the United Kingdom, averaging 13 million pounds a year for fresh pork and 5 million for pickled or salted products.

Early in 1940 Britain stopped importing pork products from the United States. Shortage of dollars and shipping space meant that only the most necessary foodstuffs could be bought in the dollar area, and these in the most condensed form.

After lend-lease shipments got under way in 1942, canned luncheon meat and bacon from the United States became important in the British diet. But restrictions imposed by the United Kingdom in August 1947 again curtailed United States pork exports. Our shipments of meat and lard to Britain dropped from $58.5 million in 1947 to $0.8 million in 1948.

The highly efficient U. S. citrus and deciduous fruit industry feels keenly United Kingdom import restrictions.

Development by British capital of pork production in Australia and oilseed production in British East Africa may bear directly on United States producers of pork and lard. Such schemes are long range and costly—and during their development seek protection against foreign competitors.

During the war our exports of dairy and poultry products increased sharply. An important trade developed in certain commodities such as cheese, dried milk, and dried eggs, which the United States exported in small quantities or not at all before the war.

In 1945 and 1946 the United States supplied about one-fourth of the United Kingdom's cheese imports. We were Britain's main source of condensed and dried milk. But in August 1947 the United Kingdom imposed a virtual embargo on United States goods, and in 1948 our exports to the United Kingdom of dairy products and dried eggs, which had totaled $143 million in 1947, dropped to $30 million. In 1948 and 1949, marketings have been in cheese, dried whey and eggs, and frozen eggs. The trade, though small, would have been smaller had not ECA made it easier for the United Kingdom to finance it.

Tobacco

Though United Kingdom consumption of tobacco has increased steadily, the percentage of British leaf imports supplied by the United States has declined.

During the 5 years before the last war the United States supplied about 75 percent of United Kingdom imports of unmanufactured tobacco; in 1947 we supplied 68 percent; in 1948, 61 percent. Can this decline continue when British smokers have shown a preference for cigarettes exclusively of mild, bright, flue-cured leaf? Some developments and recent British action indicate that the answer may be yes.

Canada is now producing annually twice as much flue-cured tobacco as the average for 1935–39 and can export about 15 million pounds of flue-cured leaf annually. In Southern Rhodesia production has expanded spectacularly. An Empire tariff preference inaugurated in 1919 [4] gave it its impetus. From a level of less than a million pounds during the later years of World War I, output rose to about 27 million pounds in 1934, 52 million in 1945, and 83 million in 1949.

This rapid expansion, largely of the Virginia flue-cured type, has not resulted from price or quality, but from noncommercial factors, such as a duty preference and, since 1947, guaranteed purchases, made at prices higher than those for which better tobacco was available in the United States. The industry's goal is reported to be annual exports of 75 million pounds to the United Kingdom by 1953.

Such other Empire areas as British East Africa, the Union of South Africa, and India are expanding or plan to expand flue-cured tobacco acreage.

The United Kingdom maintains three types of controls that currently place United States producers at a disadvantage in the British tobacco market.

The first is preferential tariff treatment for Empire products. Unmanufactured and unstripped tobacco from the United States containing 10 pounds or more of moisture per 100 pounds of tobacco is subject to an import duty of £2 18s. 2d. per pound, or 1s. 6½d. (21 cents) per pound more than the levy on the same classification from Empire sources.

The second type of control is an over-all limitation on how much United States tobacco can be bought. In 1946, when Britain expended foreign exchange more freely, United States tobacco exports to the United Kingdom totaled $214 million, compared with $98 million prewar. In 1948 they dropped to $90 million.

The third type of restriction is domestic mixing regulations. Manufacturers are required to put a minimum of 5 percent Oriental-type tobacco in all cigarettes produced for the home trade. As a result, imports of Oriental leaf are rising abruptly.

Under free marketing conditions, tobacco production in the Empire probably would not endanger the United States leaf market in the United Kingdom. With prolonged restrictions on imports from the United States, however, Empire production and United Kingdom consumption of Empire leaf may become well established. Too, the compulsory mixing of Oriental-type leaf in all cigarettes consumed in the United Kingdom may change the taste of smokers to other than flue-cured leaf.

[4] S. S. Murray, *Report on Tobacco with Particular Reference to the Prospects of Increased Production in Central and East Africa*, published by the Colonial Office, Colonial Research Publications, No. 4, 99 pp. London. 1949.

Wheat and Other Grains

Among our more important exports of grains and grain products to the United Kingdom are wheat, corn and corn products, barley, and rice. Our exports of wheat and flour to the United Kingdom, in terms of wheat, averaged 22.4 million bushels a year before World War I. They became especially important during World War I and after World War II but constituted a significant trade during peace.

Annual wheat shipments averaged 28 million bushels in 1926–30 and stood at 25 million bushels in 1938. Corn products exports to the United Kingdom, such as starch and corn sirup, were important but adversely affected by Empire tariff preference and high protective duties during the interwar period. Corn sirup exports declined from 120 million pounds in 1922 to 15 million pounds in 1935.

In the first half of the 20's the United Kingdom was our chief barley market, taking an average of 12.6 million bushels a year, or 75 percent of our exports. During the 30's it took 5 to 6 million bushels a year.

In whole cleaned rice the United States was Britain's second most important supplier. In the early 20's United States annual exports of rice grain to the United Kingdom ranged from 30 to 50 million pounds, while those of broken rice, rice flour, and meal were about 4 to 5 million pounds.

From an average of $23 million in 1936–38 and $69 million in 1947, our shipments of wheat, wheat flour, and other grains to the United Kingdom dropped to $0.1 million in 1948. As a result of the economic talks in Washington in September 1949, the United Kingdom agreed to spend $30 million of ECA funds on wheat from the United States during ECA's 1949–50 program year.

Under the 1949 International Wheat Agreement the United States has a foreign market, at guaranteed prices, for 165 million bushels of wheat a year for the next 4 years. The British market, however, is largely supplied under bulk-purchase arrangements with the Dominions. Besides, after Marshall Plan aid terminates, British purchases of wheat and other grains and grain products will be affected by other factors, including the British dollar balance.

Outlook

Except for wheat, the United Kingdom probably will achieve most of its domestic agricultural goals. That achievement, however, will not destroy much of the market for agricultural products that the United States held before the last war. Its greatest effect would be on the marketing of wheat and feedstuffs, production of which has greatly increased in both the United Kingdom and the United States.

The domestic program in Britain does not conflict with the United States market for pork, dairy, or

fruit products. The British dairy program, which emphasizes production of liquid milk for domestic consumption, provides less competition for our dairy exports than British prewar milk policies did. Our exports of fresh, dried, and canned fruit do not appear to be adversely affected by domestic British production. For canned and concentrated juices the nutrition program appears even to improve prospects for our producers.

British trade controls, bulk purchases, bilateral trading agreements, and certain policy measures have resulted in much more severe reduction of the share of United States agriculture in the British market than that caused by Britain's domestic agricultural program or by the preferential tariff in the interwar period. Substantial headway under the reciprocal trade agreement program has been made between the United States, on the one hand, in reducing its protective tariffs on agricultural products and the United Kingdom and Dominions, on the other hand, in reducing the differential between their tariff rates on products from Empire sources and those from most-favored foreign nations such as the United States.

United States agricultural exports to the United Kingdom are being helped by the ECA programs for tobacco, cotton, wheat and flour, lard, cheese, dried and frozen eggs, citrus juice, and certain other items. The trade, however, flows much less regularly for most products than prewar. The volume of trade for most leading prewar exports to Britain is very much below prewar levels and cannot be expected to attain a stable basis unless there is decided improvement in the British dollar balance position.

The recent devaluation of currencies in the sterling area helps somewhat the competitive position of Empire products being sold in the United Kingdom market and should tend to make it easier for the United Kingdom to increase its exports to the United States and to Canada. On the other hand, further reduction by the United States of obstacles standing in the way of imports and the relaxation of British quantitative restrictions appear to be necessary before sterling-area countries can be sure of a market in the United States and before our agricultural producers can expect conditions to be favorable for them to regain their prewar volume of exports to the British market. To solve their dollar problem, including the safeguard of their improved trade position resulting from devaluation, the most efficient utilization of resources by Britain and other dollar-short countries would appear to be necessary. A genuine effort to sell in the United States market, including in some instances a reduction in raw-materials costs and margins of profits, must be substituted for the easier selling practices in sterling-area markets under bilateral arrangements.

In addition to the efforts that are being made by the British Government and governments of other dollar-short countries to make the necessary adjustments in their foreign and domestic economic policies, private producers of industrial and agricultural commodities must realize that efficient operation of their enterprises is the best way in the long run to raise the level of production and consumption and to obtain an assured market at reasonable prices for the entire national output. These factors will be important in determining whether the United Kingdom and other countries that suffered most severely from the war will be able to restore the free exchange of their products for those produced abroad, among which may be more of the agricultural surpluses produced in the United States.

Green Crop Preservation in Germany, May and November 1947, Agriculture Overseas Report No. 9 (B. I. O. S. Final Report No. 1858), 28 pp., illus. His Majesty's Stationery Office, London, 1949. 75 cents. (Orders should be addressed to Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C., requesting PB No. 98274, and should be accompanied by check or money order payable to the Treasurer of the United States.)

This report presents the findings of two missions that went to Germany in May and November 1947, under the auspices of the British Information Objectives Sub-Committee, to study crop-drying methods and plants in the British and American Zones. Stating that sugar-beet tops are the principal crop in Germany for drying or ensilage, the report devotes itself almost entirely to consideration of harvesting and treating that crop. Seven appendices treat such subjects as the "cold" process of silage making, cooperative and commercial drying plants, and the Pommritz system of harvesting.

Vegetable Crops, by Homer C. Thompson, 611 pp., illus., 4 ed. McGraw-Hill Book Co., Inc., New York, 1949.

New material includes statistics on trends in consumption of vegetables since World War I; developments in the knowledge about vitamins and minerals in vegetables and about plant nutrition, weed control, and marketing.

FAO—Its Fifth Annual Conference

by JAMES O. HOWARD

The Fifth Session of the Conference of the Food and Agriculture Organization of the United Nations concluded December 7 at the Shoreham Hotel in Washington, D. C., after 2½ weeks of work.

The public observer trying to evaluate this Conference no doubt carried away several impressions.

One would be the "color" of the Conference. There was the varied dress, the many tongues, and the massed flags of the 63 member nations [1] behind the speaker's platform. But in the midst of these differences, all delegates had a common goal—to get more food to more people and improve the lot of farmers.

A second impression would be that it was impossible for one person, alone, to follow and really understand the proceedings. The work of the Conference started months before the formal opening. The staff of FAO had prepared many documents and sent them out to member governments—a report on the work of the past year, a program for 1950 and a budget to go with it, an analysis of the world food situation, and many others. An outside committee of experts had prepared a plan for helping move surpluses to areas of need. Committees of governmental representatives had drawn up reports on some of these questions as well as on the amount that each government should contribute to FAO's budget.

After all these documents had been distributed to member governments some weeks before the Conference, the governments set to work formulating their positions on each question on the agenda.

The Conference opened simply enough. Officers were elected, the agenda was adopted, a few speeches were made.

On the second day, President Truman addressed the Conference. He pledged the continued support of the United States to the work of FAO and re-emphasized the now famous Point Four of his inaugural address.

On the second day too the Conference began to separate into sections. It was first divided into three commissions. In Commission I the ministers of agriculture and other top officials met to discuss the broad issues facing world agriculture and the courses that nations should take individually and collectively. Commission II, in which FAO's program for 1950 was discussed, was made up of technicians from member countries. This Commission was soon further divided—the forestry experts meeting to discuss that phase of the work with the staff of FAO's forestry division, the nutritionists meeting in another room. the fisheries experts in another, the agricultural experts in another, and so on.

To Commission III came the budget and adminis-

[1] During this Conference, five additional countries became members of FAO—Afghanistan, Indonesia, Israel, Korea, and Sweden.

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trative experts to consider such questions as FAO's budget for 1950, the permanent site of FAO's headquarters, a pension plan for employees, and many other questions involving the administration of an organization that is still young and growing.

Later the panels and working parties in each Commission reassembled to agree on a commission report. Finally the commissions met again in a plenary session out of which came a composite report of the entire Conference.

So it is not surprising that the outside observer could not follow what was going on. Neither could an individual member of a delegation if he were working alone. Delegations had to be carefully organized to see that all phases of the Conference work were covered and that the delegations' activities were coordinated.

The United States Delegation, for example, headed by Secretary of Agriculture Brannan, consisted of 45 people. It included technicians from the Departments of Agriculture, State, Commerce, Labor, and Treasury, and the Federal Security Agency; five members of Congress; and public representatives in farm, forestry, fisheries, and consumer fields. Daily Delegation meetings plus frequent informal consultations provided the necessary coordination.

A third impression of the casual observer would be that much of the Conference's work was not spectacular. The basic job of the Conference was to make policy for the organization. The work of Commissions II and III is somewhat similar to the work of the subject matter and appropriations committees of the United States Congress as they consider the legislative and budget requests of agencies of the Federal Government. The FAO Conference's work, however, is complicated by the fact that every speech is made twice—once in English and again in French. Documents must also appear in both languages. The language factor places at a great disadvantage those delegations that have neither French nor English as their native tongue and therefore have to speak in a foreign language.

A final conclusion of the observer at this Conference would be that FAO was making a real contribution to the building of a better fed and hence more stable world and that it promises to make a still greater contribution in the future.

FAO's Contributions

FAO is a small organization with a budget of $5 million. This is less than a tenth of the money now spent annually by the United States Department of Agriculture for research.

Nevertheless, FAO is carrying on work in many phases of agriculture, forestry, and fisheries. Following are some of the projects that were discussed at the Conference.

Losses in Stored Grain. Ten percent of the world's grain crop is destroyed by insects, rodents, and fungi. Many nations have little knowledge of modern methods of killing weevils or building rat-proof bins. FAO has held one world-wide conference and a regional conference to acquaint government specialists with the latest developments in this field. It is now carrying on a demonstration project with the Costa Rican Government to show in one area of that country just what can be done with modern methods.

Locust Control. Man has fought locusts, and their cousins, the grasshoppers, since Biblical times. FAO has been getting nations together to fight them on a regional basis. Progress in this Hemisphere was made at a meeting of the Latin American countries held this summer in Mexico.

Plant Quarantine. FAO is studying the plant quarantine laws of all countries, striving toward greater uniformity and cooperation in this field.

Wheat Varieties. FAO is now preparing a world catalog of all the genetic stocks of wheat. This is an undertaking to which specialists in plant breeding have been looking forward for a long time. It is expected to be especially helpful to them in locating supplies of new and unusual varieties that may be useful in developing new hybrids. A similar catalog is being started for rice. Later, others will also be made up for additional crops.

Hybrid Corn. FAO is collecting and distributing improved varieties of crops. For example, United States hybrid corn, which can obviously mean much to the rest of the world, has been supplied to countries in Europe, the Near East, and India. In 1947, FAO held a meeting of specialists in Europe to explain recent developments in hybrid corn.

Rice. Rice forms the basic diet of more than half the world's people. FAO has formed an International Rice Commission with headquarters in Bangkok, Thailand, to study ways of increasing rice production and improving the hulling and processing of rice.

Rinderpest. Rinderpest is probably the most dreaded livestock disease in the world. It is particularly bad in such areas as China, the Philippines, India, and the Near East, where it frequently kills the one water buffalo or ox that a farmer has for workstock. During the war the United States and Canada worked out an inexpensive method of manufacturing preven-

tive vaccine. FAO has helped set up plants to manufacture this vaccine in Asia and in Ethiopia. It is now leading a world-wide campaign against the disease.

FAO has carried on a great many other programs in various fields. It is now stepping up its campaign to encourage and assist nations in establishing extension services. It is sponsoring a world census of agriculture next year, which will give us the most complete agricultural figures the world has ever known.

Four Basic Questions

Four questions considered by the Conference deserve special mention: The present world agricultural situation, machinery to aid surplus distribution, FAO's role in the Point Four Program, and FAO's permanent headquarters.

Situation Highlights

PRODUCTION. Total world agricultural production, the Conference concluded, has regained prewar levels. Population having increased about 10 percent, however, the supplies available per person are still below prewar. At the projected rate of progress the supply per person will not reach prewar levels for some 6 or 7 years. Too, the composition of the food supply is nutritionally inferior to prewar.

While agricultural production in the Far East and Europe has not yet fully recovered to the prewar level, output in North America has expanded greatly to meet the larger home market and the urgent needs of war-damaged countries.

CONSUMPTION. Consumption disparities between nations have become magnified. The diets of some of the better-fed nations have become better and those of some of the poorly fed nations have become even worse.

INTERNATIONAL TRADE. In the international trade situation, the most significant feature is the great increase in the share of the United States and to a lesser extent of Canada in world food exports. Their portion has risen in the past 10 years from less than one-seventh to about two-fifths of the total. At the end of the war, their share was even higher. The United States share in world exports of bread grains rose from about one-tenth before the war to close to one-half since the war.

The volume of food exports of the rest of the world (other than the United States, Canada, and Cuba) has fallen some 40 percent and is recovering only slowly. In the Far East the decline in trade has been particularly severe.

While the world is relying more heavily on dollar

U. S. Secretary of Agriculture Brannan, who headed the U. S. Delegation at FAO's Fifth Annual Conference, is shown chatting with Oklahoma's Congressman Wickersham, a Congressional adviser, and Director-General of FAO, Norris E. Dodd.

countries for both agricultural and industrial goods, the means of paying for them have decreased.

Out of all this has grown a situation of inherent instability in which even the present inadequate consumption levels of the food-deficit areas are precariously held.

Any sudden fall in the dollar earning of the food-deficit countries or in the volume of United States gifts and loans might precipitate a food shortage in those countries and a surplus-disposal problem in North America.

CURRENT POLICIES OF GOVERNMENTS. In light of this situation the Conference reviewed the reported policies of governments. In very diplomatic language, it suggested that some of the policies of some governments were further aggravating present difficulties. It also noted that the export plans of the surplus-producing nations exceeded the import plans of the deficit nations.

International Commodity Clearing House

FAO has had a committee of experts studying the problem of surplus distribution, particularly as to means of moving surpluses while nations are still trying to recover economically.

The expert committee proposed setting up an International Commodity Clearing House. Though the details were not fully worked out, the proposal would have involved the organization of an international corporation with a billion-dollar capital of which the United States would contribute possibly about 40 percent. Though the corporation would do little buying and selling itself, it would serve as an international

"expediter" of transactions. For example, the United States could offer surplus eggs for which ICCH could find a market in another country, accepting the currency of that country in return. Until that country returned to full convertibility, this soft currency would be held to the account of the United States. Or in unusual circumstances it might be used to buy something in that country that the United States would not have otherwise bought. In other instances, ICCH might be able to sell those eggs, at a reduced price, for dollars.

Most nations took part in the debate on this question and practically all of them objected to the proposed financial arrangement. It was pointed out that sales for soft currency would be merely another form of a loan and that loans made in this manner would tend to postpone the time when nations would be able to make their currencies fully convertible. Since the return to full convertibility and an expansion of trade through normal trade channels is one of the fundamental purposes of the European Recovery Program, the United States felt that this would be particularly undesirable.

As concerns special price sales, the countries that have allocated their scarce dollars for essential imports felt that they would be reluctant to cut out any of these essential purchases to buy surplus products.

The Conference felt, however, that the objective of getting international discussion of surplus-disposal schemes before they were put into operation by member governments was particularly desirable. Therefore it set up a 14-government committee within FAO to consider such proposals when brought forth by member governments and to continue study of the over-all problem.

Point Four

Basic framework of the technical assistance program had already been laid by the United Nations and its Economic and Social Council. All contributions for this program will go directly to UN. The Economic and Social Council has agreed on a formula for their distribution. FAO will get 29 percent, the largest share going to any agency.

All requests from governments will be reviewed by a committee consisting of top representatives of all the specialized agencies—FAO, the World Health Organization, the International Labor Organization, and others.

FAO's final program will depend on the requests it gets from member governments and the action taken by this top committee. However, it has worked out a careful program illustrating—in each of its fields of work—the *type* of activities that it would undertake.

The Conference approved these arrangements and also the illustrative program that Director-General Dodd had presented. Authority was given the Director-General to begin exploratory negotiations with governments so that action can be launched as soon as funds are made available. A number of governments have indicated that they are ready to contribute funds whenever the United States is ready. Legislation is now pending on this subject in the United States Congress.

Headquarters Moved to Rome

FAO has been temporarily headquartered in Washington since the organization was formed in 1945. UN had invited FAO to locate with it in New York. The United States had issued an invitation to locate in either the Washington or New York areas, and legislation had been introduced in Congress, and passed by the Senate, to grant a $7-million interest-free loan to construct a headquarters building. Several free sites had been offered in the Washington area, including one on the University of Maryland campus. Attractive offers had also been made for Copenhagen, Geneva, and Rome.

After a lengthy debate, the voting on this subject was quite spirited and lasted far into the night. Copenhagen, Geneva, and New York were eliminated on the first three ballots. The vote on the next ballot was 27 for Washington and 29 for Rome with 2 being cast in blank. A majority was required for election. The chair ruled that the blank votes be counted and that neither had a majority. On the final ballot the two abstaining countries indicated their choice and the decision was Rome, by a vote of 30 to 28.

Important factors mentioned by those voting for Rome were that the building offered by Rome was free, involving a considerable saving from the loan repayment that would be required in the United States, and that contributions could be paid in Italian lira—a soft currency—which would save scarce dollars. The fact that labor is cheaper in Rome and the possibility of racial discrimination in the United States were also mentioned.

The building in Rome will not be completed for about a year so it will probably be 1951 before the move takes place.

The next conference is tentatively scheduled for April 1951.

United States Agricultural Mission to Panama

by ALFONSO TEJEIRA

Panama's strategic location at a crossroad of the world has for many years set the country's economic pattern. Emphasis on trade overshadowed such natural resources as land.

Within the past decade, however, farming—always of major importance in most Latin American Republics—has begun to assume its proper place in the economy of the Republic of Panama. A growing interest in agriculture resulted in the formation in 1940 of the Ministry of Agriculture, Commerce, and Industry. It is with this branch of Government that the United States Agricultural Mission has worked for the past 2½ years.

The Mission has already made marked contributions to Panama's rapidly expanding agriculture, especially in the fields of crop improvement, soils, water resources, and mechanization. It was with farm mechanization that the Mission began its work.

Only 6 years after the elevating of agriculture to cabinet importance, farming in Panama had grown to an extensive activity that taxed the expanding facilities of the Ministry.

The need for further development became apparent in the Fomentos, service units organized to show planters how best to till their land and harvest their crops. The Fomentos had imported numerous pieces of farm machinery for demonstration purposes. As a result, many farmers had purchased tractors, plows, seed drills, and combines. They were quick to see the advantages of mechanization, and each year as more and more new land was put into cultivation, additional equipment was imported.

Since mechanized farming was new to many of these farmers, they turned to the Fomentos for instruction. To assist with the growing work load at the Fomentos, the Panamanian Government asked the United States for an agricultural engineer. Earl Rambo of the Arkansas Extension Service was detailed to give this assistance.

Senor Tejeira is Secretary of Agriculture, Republic of Panama.

Working with technicians of the Ministry of Agriculture, Commerce, and Industry, Mr. Rambo held meetings throughout the country to familiarize owners and operators with the proper use and maintenance of their machinery. Tractor schools were held by the Fomentos during which operators were given intensive training in the proper handling of farm equipment. All this activity met with enthusiastic approval by the nation's farmers and the general public and has formed a nucleus of well-trained machinery specialists that has continued to grow.

With its mechanization program satisfactorily under way, the Ministry focused its attention on other pressing problems of agricultural production and requested the services of United States specialists in related fields.

Testing windmill water pump. Of value to Panamanian farmers is the Mission's report on water resources in certain areas.

Before Mr. Rambo had completed his year's work, the Mission was augmented by two more specialists, W. P. Sellers, Extension Specialist from Louisiana Extension Service and Director of the Mission, and Marion M. Striker, Soil Scientist on loan from the United States Department of Agriculture's Bureau of Plant Industry, Soils, and Agricultural Engineering. Dr. Sellers is still in Panama, but Mr. Striker finished his work and has returned to the United States.

A ground-water geologist, George Taylor, was recently assigned to the Mission for a 3-month study. He has completed a report on the water resources of certain areas that will be of great value to livestock men and farmers in general.

In the past year the Mission assisted in the classification of 45,000 acres of land as to soil type and possible use for crops. This work has encouraged many landowners to call on the Ministry for help and advice in selection of soils.

The extension work of the Mission has been carried on over most of the Republic, but large-scale demonstrations have been centered at Divisa, on the farm lands of the Agricultural School, and at David, capital of the rich agricultural province of Chiriqui.

Here, experiments on rice, Panama's principal food crop, have been carried out. There is great interest in increasing the supply to equal local consumption. Panama cannot, in the interest of national economy, continue to import large quantities of rice.

The rice-production program has covered all phases and problems of the crop. New varieties, especially adapted to mechanized harvesting, have been introduced, experiments are being made on the use of chemical weed killers and special spraying equipment, and tests are being carried out on the effect of soil fertility on production. Problems of drying, storing, and milling the crop have also been given a great deal of attention.

The program of the Ministry calls for the assignment, over a period of years, of 10 or 12 specialists in engineering, agronomy, livestock, soils, geology, and related subjects. The extension work they will do and the training resulting from their cooperation with members of the Ministry should lay the ground work for future operations in these fields.

Constructing rice field levees at Divisa. Rice is Panama's principal food crop.

Venezuela's Meat Shortage Problem

by STANLEY E. BAKEWELL

Venezuela is highly conscious of the need for modernizing its livestock industry to meet the greatly increased demands on supply and has set up a program whereby it hopes over a period of time to increase both the efficiency and output of the industry.

Venezuela's meat shortage problem arises from increases in city population outdistancing production abilities of the livestock industry. The Government hopes to meet the problem by encouraging better breeds of livestock, better production methods, better transportation, and better methods of meat handling.

Traditional practices of meat production, processing, and marketing were accepted as adequate until recent years, when oil was discovered in the country and a marked shift in population from the country to the larger cities took place. The impact of the new industry on the Venezuelan economy has been in the direction of expanding city industry generally, thus continually encroaching on the labor supply of the agricultural and livestock industries. This has cut down meat production in the rural areas and at the same time has built up in the cities a new laboring population, for which there has been a decreasing meat supply. The shortage is felt throughout the country in general but certainly most acutely in the urban areas, such as Maracaibo and Valencia, and particularly in Caracas and its immediate environs, where the Government has become especially aware of the need for relieving the shortage.

Ever since early colonial days, when cattle were first introduced by Spanish explorers, the livestock industry has been important in Venezuela as a source of meat for domestic consumption and of animals and hides for export.

The major cattle-producing center is that south of the coastal range, in the llanos, as far east as Valle de la Pascua. This region, extending from the western Andes to the Orinoco Delta, consists of wide open plains with many lakes, small clumps of palms, and a variety of useful grasses.

Venezuelans raise most of their cattle on the open range, unherded, and, for the most part, unbranded. The native cattle, or criollos, are descendants of breeding stock brought from Spain by the early explorers. Counterparts of the Longhorns of Texas, they have adapted themselves to the climate and environment and have become resistant to the diseases and pests that flourish uncontrolled. They receive no feed other than the native grasses.

The cattle producers, or llaneros, most of them of Spanish descent, live on large tracts of land, some of which contain thousands of acres and many of which are owned by absentee landlords. Llaneros have many problems. The first they encounter are on the range itself. Lack of fences makes it impossible for them to control large herds. Pastures are run down. There is little or no irrigation and little or no control of erosion. Water supplies are uncertain, for there is no way to store the superabundant water of the wet season against the time of the dry. Most herds go unimproved. Only in recent years have producers made any attempt to adopt modern breeding practices.

Perhaps their greatest problem is the absence of a modern transportation system. Periodically the ranchers gather up their steers and bulls and start them to market on the hoof. These herds may range in age from 4 to 10 years, but those selected for the market in Caracas are in the 4- to 5-year group, the cream of the crop. These ages, however, must not be considered indicative of the average slaughter age throughout Venezuela, for out on the ranches much of the slaughter is of 2-year-olds or calves.

Cattle destined for city markets have a trip that is long and difficult for the animals and costly for the rancher. Alligators and electric eels take their toll as the herds cross the rivers. Cattle stray away. Sickness and lameness on the road are widespread, often claiming as much as 20 percent of the herd. The animals may go for 6 or 7 days over a rugged trail without food and some days without water, usually arriving at their destination in very poor condition. The cost of drivers is considerable, too, for the trip requires many men on horseback. At the

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beginning of the drive the herd is large. When it reaches the foothills and brushy sections, it must be divided into smaller groups of 80 to 100 head, and each group driven off to one of the several destinations—the fattening pasture near Valencia and Maracay or the slaughtering plants at Maracay and Calabozo or near Caracas.

It is not only the lack of transportation facilities that makes it difficult for Venezuela to enjoy improved marketing practices. The shortage of refrigeration plants and equipment makes storage almost out of the question and eliminates the possibility of meat stocks. In fact, the only reserve supply is the livestock in the pasture.

Thus necessity dictates the customs of slaughtering and marketing. In the villages and small towns slaughtering is a daily occurrence, usually completed by sunrise. The housewives must gather at daybreak to obtain their meat supply for the day. Anyone who comes later will be sure to find the supply exhausted.

In the cities, slaughtering and marketing procedures follow a somewhat different pattern. There are several slaughterhouses supplying Caracas. The largest is located at Maracay and can handle approximately 200 head per day. There are others nearer Caracas but these have no facilities for taking care of the by-products. One slaughterhouse has been built at Calabozo, in the State of Guárico. San Fernando de Apure has one plant, closed at present. It has refrigeration and machinery for canning corned beef. When it is in operation, it can handle about 25 head per day. Another large refrigeration plant has been built at Puerto Cabello by a British firm.

It is the custom in these plants to begin slaughter in the morning. As the animals are skinned and cut into halves, they are loaded into trucks. If the slaughter is at Calabozo, the carcasses may be refrigerated, for if there are no delays on the road the haul from Calabozo to Caracas is 7 hours long. But if the animals are killed at Maracay, which is only 3 hours from Caracas, the carcasses are merely ventilated. Upon reaching Caracas the trucks make their rounds of retailers who buy according to their needs and storage facilities. Actually most of the deliveries are made in the evening, when the air is cool.

Retailing practices within the cities are still conditioned by the habits that have prevailed over the centuries. The people buy their meat early in the day. By 7 o'clock in the morning all meat in the open-air markets has been bought, and by 9 o'clock all retail butchers except the largest and most up-to-date caterers to the foreign population have sold out.

Most city retail butchers of any size have refrigerated display cases, and some of the larger ones have cold-storage rooms. Many retail butchers, however, have no storage facility but a stout hook or two. Even those merchants who have refrigerated showcases do not stock more meat than they expect to sell that day because of the unreliable electricity supply and the fact that few customers are likely to enter a butcher shop after 11 in the morning.

Thus the processing, wholesaling, and retailing aspects of the meat industry also have handicaps that must be coped with if the livestock producer in Venezuela is going to meet consumer demand.

The Government, cognizant of this situation, has been directing its policy toward alleviating the present acute shortage and at the same time has been making attempts to encourage the rancher and strengthen the livestock industry in general. Manifestations of these

Cattle move from ranch to city markets on the hoof. In some areas the trip takes 3 weeks.

Cebu breeding stock is being imported from Brazil and the United States for use in Venezuela's livestock improvement program.

efforts in recent years on the part of the Government have come through price controls, meat importations, importations of improved breeding stock, increased credits for the producer, and directed aid through agricultural extension.

Government price manipulations date back to about 1945, when the National Supply Commission established prices for live cattle and beef. The prices established at that time proved highly unsatisfactory to the cattlemen. And in its effort to enforce them the Government only intensified the shortage. Meat exports were discontinued after 1946 as the effective demand exceeded the supply. With rising prices the pressure to prohibit meat shipments was great, and the Government turned to price manipulations in its early attempts to solve the shortage problem in the Caracas area. The Government changed the set price several different times, with the price being based on weight classes at a given price per 100 pounds but with the weights of the classes overlapping. These moves of prices, weights, and changes in methods of buying were made in an effort to find a solution to the problem.

Finally, in July 1947 the Government decided to import deboned frozen beef from Argentina in an attempt to relieve the acute meat shortage in Caracas and the surrounding area. For payment, Venezuela obligated itself to furnish Argentina with 2 million barrels of petroleum. The quantity of beef contracted for was approximately 16,500 short tons, to arrive in equal monthly installments. The first trial shipment arrived at La Guaira on December 20, 1947, and was placed on sale from a small storage plant in Caracas. During the calendar year 1948 actual imports amounted to 8,220 tons.

In bringing in these shipments the Venezuelan Government overlooked a long-established decree of the Ministry of Agriculture prohibiting the importation of beef from countries known to have foot-and-mouth disease. Despite its concern with the meat problem, however, the Government was aware of the threat of the disease to the domestic livestock industry and took precautionary measures. It restricted the sale of the Argentine product to a given zone. The Ministry of Agriculture had formerly established at considerable expense a quarantine station for live animals on the barren island of La Orchila, 90 miles off the coast from Puerto Cabello and had had its entire cattle quarantine plant and methods thoroughly checked and approved by competent British veterinarians. With the admitting of Argentine imports, it was arranged to have a Venezuelan veterinarian inspect in Argentina all beef destined for Caracas. In addition the Government prohibited raising hogs within the area where Argentina beef could be sold and set up a system of moving the imported beef from its port refrigeration plant at Puerto Cabello to Caracas in closed refrigerator trucks.

The ever-present danger that the foot-and-mouth disease might be introduced into the country has had a pronounced effect not only on the beef importation policy but also on the operations of the Venezuelan Development Corporation in its cooperation with the Ministry of Agriculture in conducting cattle purchasing missions abroad to secure breeding stock for the improvement of Venezuelan cattle. At the same

time that it has been fixing prices and importing beef, the Government has gone ahead with its purchases of Cebu breeding stock in the United States. At present it is enlarging the facilities of La Orchila to accommodate the importation of some 400 head of breeding cattle from Brazil. The importation of these animals may be described as a semiofficial venture because the Government is committed to purchase a large part of the herd. The remainder will be sold to private stockmen. Meanwhile, a commission of Venezuelans has been visiting France and Switzerland inspecting Brown Swiss herds. This commission reports that there is foot-and-mouth disease in France but not in Switzerland.

Other measures are being taken by the Government in behalf of the cattle industry, including promotion of agricultural extension work. In efforts to encourage herd improvement, the Government sent a group of 12 cattlemen on an officially conducted tour of Texas this past year. It also made a determined effort to construct artificial ponds in the llanos. Most of these ponds were constructed in the State of Guárico where 86 ponds were built in 1947 and 66 in 1948. Contractors with equipment were not interested, however, in taking heavy machinery far into the llanos for small jobs when there was more profitable employment elsewhere. Plans now are to abandon pond construction in favor of well drilling where adequate subsurface water supplies are available within economic depths.

Although there is room for improvement in the production phase of the livestock industry, measures taken by the Government to relieve the current meat shortage are yielding effective results. As was to be expected, the programs of price controls and meat importation met with their share of difficulties. The using of Argentine deboned beef created a shortage of bones and for awhile there were "bone lines" at the butcher shops. Thus consumers soon began to demand local beef, and the Government was called upon to regulate the movement of cattle in such a way as to ensure local beef for other than the Caracas community. Some Argentine beef has been sold outside the restricted zone, but the problem proved to be not one of how to restrict Argentine beef to the original limited area, but one of how to get the people in the restricted area to accept the imported product. On April 15, 1948, the Government repealed its resolution controlling retail prices of locally grown meat. The position taken is that the high prices for Venezuelan beef will encourage production and that the present importations from Argentina are sufficient to prevent an actual scarcity.

Even though the current shortage is being met by beef importations and price controls, the long-range problem will continue to exist until the underlying difficulties are overcome. The main obstacles for the livestock men in Venezuela stem to a great degree from the inadequate transportation and marketing system, which has had a tendency in the past to discourage the adoption of improved practices in production and range management. In view of the grazing resources and agricultural potential of the country, coupled with the recent steps taken by the Government to solve the cattle problem, Venezuela has the possibility of developing its livestock industry to a point of self-sufficiency.

Balut—A Duck-Egg Delicacy

By HUBERT MANESS

A duck-egg delicacy, unknown to the rest of the world, has given rise to a flourishing duck industry in the Philippines. Especially preferred by the Tagalog people in and around Manila, the delicacy is known by the Tagalog word, "balut." It is, in brief, unhatched duckling. As popular in Manila as "hot dogs" in the United States, millions of these eggs are sold by peddlers every year along the streets of the city.

In the preparation of balut, a duck egg is kept in an incubator until it is almost ready to hatch. It is then removed and hard-boiled in the shell.

Nobody knows how long the Tagalogs have eaten this exotic food, but the custom may be centuries old since the Philippine duck industry began hundreds of years ago. probably with the arrival of the Chinese traders. The Chinese, in order to get protection from typhoons, established their early settlements along the shores of Laguna de Bay, a fresh-water lake drained by the Pasig River, which in turn runs through the modern city of Manila.

One of their early villages was later renamed Pateros (Duck Raisers) by the Spaniards because of the large number of ducks found there at the time of the Spanish conquest. The raising of egg-laying ducks is still the principal business of Pateros. Although there are

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about 400,000 ducks in the village flocks, they do not produce enough eggs to meet the demand for balut, and millions of eggs are imported annually.

Incubation Method

Duck eggs are hatched in home-made bamboo incubators shaped like a barrel. The incubators are placed, close together, in a large, specially constructed incubating room. The floor of the room is covered with about 2 feet of rice hulls, which help to absorb the humidity.

The incubators are in reality large woven bamboo barrels about 3 feet high and 2 feet in diameter, fitted to hold 10 round trays, one placed on top of the other. The trays also are made from woven bamboo and hold from 100 to 120 eggs each, depending upon the size of the eggs. Thus one hatching barrel holds from 1,000 to 1,200 eggs. The rest of the equipment is also home-made and simple. It consists of rice hulls, abaca mesh bags, a copper kettle, and coconut hulls or charcoal, which is used as fuel. In preparing the incubator, rice hulls are heated in the copper kettle until they are very hot and dry. They are then put into abaca bags. One of these bags is loosely fitted into the bottom of the barrel, then an egg tray goes on top of that, followed by another bag and a tray until the barrel is full. Over the top is placed a bag of heated unpolished rice, because unpolished rice holds heat longer than the hulls. Finally the assembled incubator is topped with a large, heavy abaca cloth.

Filipinos purchase the duck-egg delicacy, balut, from street vendors.

Three times every 24 hours the egg trays are removed and the eggs are turned by hand. During turning, they are sprinkled with water if atmospheric conditions warrant it. The rice bags are replaced with hot ones whenever necessary. During the height of the hot season, they are generally changed only once a day, in early morning when the temperature usually drops.

Because of their long experience the men operating the hatchery do not use a thermometer to test the temperature of the eggs; instead, they place them against their cheek or eyelid. The eggs are candled after 8 days, and the infertile ones are removed. Such eggs are then boiled until hard and sold under the name of "penoi," which is considerd inferior to "balut."

Balut Preparation and Distribution

The remaining eggs are left in the incubator for an additional 10 days, after which they are removed, boiled until hard, and marketed as balut.

These eggs are sold by peddlers along all the principle streets of Manila. They are kept warm in small well-covered baskets. To the Filipinos who eat balut, it takes the place of meat since the embryo is well-formed and has a meat flavor. The hard-boiled yoke is considered very tasty because of its cooked-blood flavor, and the juice is drunk with great gusto. When the Tagalogs eat balut, they crack the egg at one end, drink the juice, and then pick out the content with their fingers.

Duck Raising

This duck industry is made possible and economical by the fresh-water lake, Laguna de Bay, which contains almost unlimited amounts of snails and other aquatic duck food. Laguna de Bay, just southeast of Manila, is 25 miles long and 21 miles wide and covers an area of about 350 square miles. Its outlet is the 12-mile-long Pasig River. One of the most picturesque

and interesting sights in the world is the water front with the thousands of duck runs, thickly placed along the shores. Each run is filled with hundreds of ducks of various colors—white, brown, black, and combinations. Each run is separated from the other by only a few feet of low bamboo fence.

Since the primary purpose of keeping ducks is for egg production, a remarkable nonbroody strain has been developed. It is a small duck similar to the American mallard. Many of the duck raisers claim that their flocks average from 150 to 180 eggs annually and that individual records of 250 eggs are common. The ducks lay the year round with only slight fluctuations between the rainy and dry seasons.

The owners state that the ducks seldom fly out or stray from their pens, but, if they do, they always return to the place where they were raised. At night the ducks are put into bamboo enclosures adjoining the run and are released after they have laid their eggs the next morning. The floors of the roosting pens are covered with rice hulls, and the ducks drop their eggs during the early hours of morning. The main diet of the ducks consists of snails, which are collected around the edges of the lake and given to them in generous amounts. Young ducks are fed rice in addition.

The eggs kept for replacing the breeding stock are hatched in the same way as for balut, except that they are incubated 28 to 30 days. The ducklings are generally hatched during August or September so as to mature in the coolest season of the year. According to several breeders, it is not uncommon to get a hatch of from 85 to 95 percent.

Most of these Pateros duck eggs will be taken to Manila and sold as balut.

The ducklings are separated soon after hatching, and only the female ducks are raised by the big producers, the drakes being sold to small home raisers. For a long time I was puzzled to see, in the public markets of Manila, hundreds of ducklings being offered for sale at 15 cents apiece side by side with

Flock of ducks at Pateros, the center of the balut industry.

Duck eggs are incubated in home-made bamboo barrels. Eggs for balut are removed just before they are ready to hatch.

fresh duck eggs costing 25 to 30 cents each. The mystery was solved when I discovered that the ducklings were all drakes, the "ugly ducklings" of the balut industry.

When the ducks are 2 years old, they are generally sold for meat. From these old ducks the Tagalogs prepare the delectable dish, "dinogog." For this the birds are dressed and cut up into small pieces and steamed with small slices of green papaya, which makes them tender. Then various vegetables and herbs are added, mainly fresh ginger root, green onions, and cabbage leaves. Many countries have dishes similar to dinogog, but none has anything quite like balut.

INTERNATIONAL

Agricultural News

Farmer Study Classes in Ireland

Prospective farmers all over Ireland, from boys in school to young men about to begin their careers, are enrolling in classes to acquire the technical knowledge they will need in their work.

In fact, this trend in Ireland toward more training for its farmers is taking on all the aspects of a vigorous movement. Among its active supporters are the Department of Agriculture, the County Committees of Agriculture, the Irish Agricultural Organization Society, Muintir na Tire, and the Young Farmers' Clubs.

Opportunity to study technical agriculture is being provided through classes in community centers, in the residential agricultural schools for boys, in the secondary schools—and in all of them enrollment is constantly increasing.

Classes that are being offered in the community centers have been organized under the auspices of the County Committees and are regarded as the most valuable form of local instruction thus far devised. James M. Dillon, Minister of Agriculture, is working to improve them and anticipates that with the cooperation everywhere evidenced they will soon be made even more attractive and valuable.

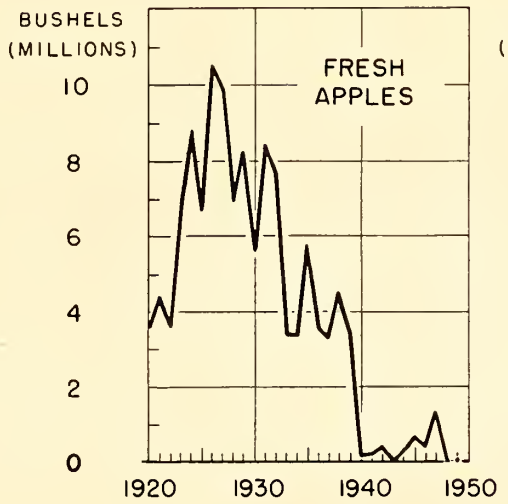
In 1939, 1,115 students were enrolled in these classes, which then were being offered in 30 centers; now nearly 5,000—about half of each year's young recruits to agricultural vocations—are attending in 126 centers. The Department of Agriculture recognizes in this year's enrollment a new high point for the program but has set an even higher goal—7,500 students a year. Already additional centers are being organized, and enough competent teachers are coming out of the universities to take care of them.

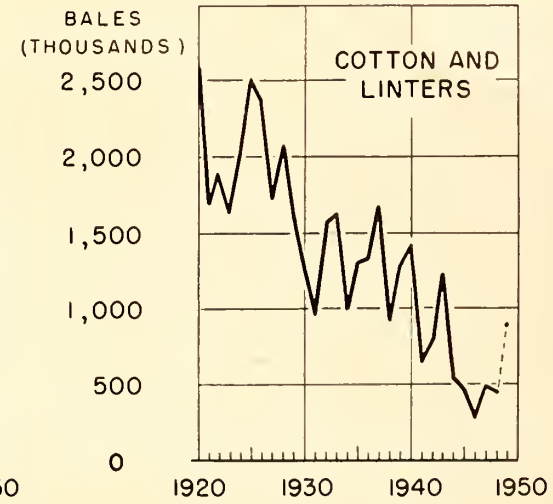
Ireland also has 9 residential agricultural schools for boys; together they accommodate 323 students. In 1939 the enrollment was 181; this year it is 286. Some of these schools are new; others have been recently enlarged. Johnstown, for example, which specializes in horticulture and has magnificent gardens, has only recently been opened.

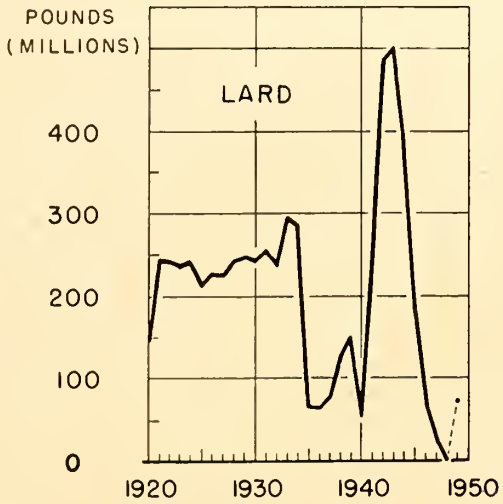
The secondary schools throughout the country are also offering courses in agriculture. This year 134 students took agriculture as an examination subject in the Intermediate Certificate test and 38 took it in the Leaving Certificate test. In 1945, when the courses were begun in many schools, the corresponding numbers were 82 and 17.

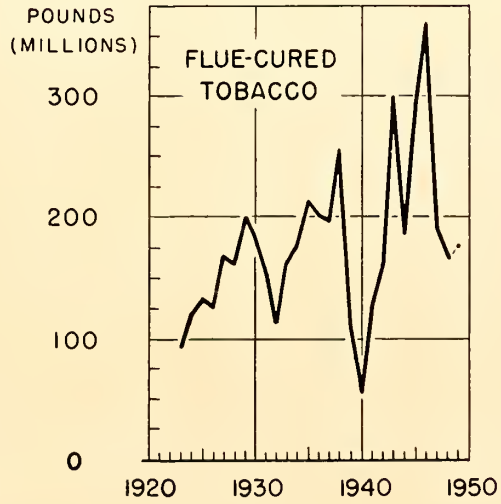
Discussion of these developments in Ireland would not be complete without mention of the schools of home economics for girls. There are 15 of these schools, and their enrollments are steadily going up. In 1938 they had only 294 students: this year they have 480. Total accommodations are for 550, but the principal school for girls, the Munster Institute at Cork, which can accommodate 47, has a waiting list.

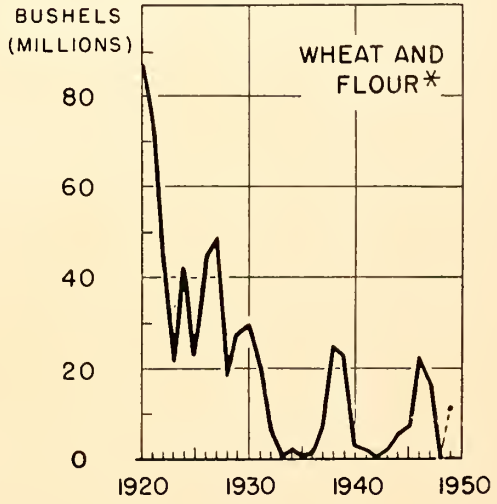
UNITED STATES EXPORTS OF SELECTED AGRICULTURAL COMMODITIES TO THE UNITED KINGDOM











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